REMARKS

This is a Response to the Office Action mailed April 1, 2010, in which a three (3) month Shortened Statutory Period for Response has been set, due to expire July 1, 2010. Fifty-seven (57) claims, including eight (8) independent claims, were paid for in the application. Claims 10, 11, 16, 31, 32, 34-37,40, 41, 43-48, 50, 53, 55-57, 60 and 66-79 were previously canceled. Claims 1, 9, 12, 38, 59, 61 and 82 have been amended. No new claims have been added. No new matter has been added to the application. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090. Claims 1-9, 12-15, 17-30, 33, 38, 39, 42, 49, 51, 52, 54, 58, 59, 61-65 and 80-86 are pending.

Interview Summary

Applicants thank the Examiner for granting a first telephonic interview with Mr. Eric M. Ringer, on June 29, 2010, and a second telephonic interview on June 30, 2010. During the first interview, claims 9, 12 and 38 and the following references were discussed: Buoguila et al., New Haptic Device For Human-Scale Virtual Environment: Scaleable-SPIDAR, Papadopoulous (U.S. Patent No. 4,280,605) and Sato et al. (U.S. Patent No. 5,305,429).

In the first interview, proposed amendments to claims 9 and 12 were discussed, and these claims have been amended accordingly. In particular, claim 9, as amended, generally recites "a first, a second, a third, and a fourth brake, each respective brake coupled to a respective tool translation effecter device of the first, the second, the third, and the fourth tool translation effecter devices and *configured to prevent rotation, prior to a power down of the haptic interface device* and while the haptic interface device is powered down, of the respective spool of the respective tool translation effecter device having the respective brake coupled thereto *in response to a controlled power down signal*" (emphasis added). (Amended claim 12 recites generally similar, but not identical, language.) Examiner Beck indicated that the proposed language appeared to distinguish over the cited references but that a further detailed review of Papadopoulous would be necessary before he could determine whether to allow claims 9 and 12.

In the first interview, claim 38 was in conjunction with discussions of Buoguila and Sato. No agreement was reached as to the allowability of claim 38.

In the second interview, proposed amendments to claim 38 were discussed in conjunction with discussions of Buoguila, Sato and Papadopoulous. Claim 38 has been amended in accordance with the proposed amendment and recites, in part, "releasing four segments of cable in response to the cable based haptic interface device being powered on, wherein prior to the cable based haptic interface device being powered on the four segments of cable are locked." Examiner Beck indicated that the proposed language appeared to distinguish over the cited references, but Examiner Beck indicated that he would do further detailed review of the aforementioned references before determining whether to allow claim 38.

Allowed Claims

Applicants thank the Examiner for allowing claims 1-8, 18-25, 29, 30, 33, 58, 62-65, 80 and 84-86.

Rejections Under 35 U.S.C. § 103

Claims 9, 12, 14, 26-28, 49, 54, 81 and 82 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Buoguila et al., New Haptic Device For Human-Scale Virtual Environment: Scaleable-SPIDAR, in view of Papadopoulous (U.S. Patent No. 4,280,605); claim 15 stands rejected as being unpatentable over Buoguila and Papadopoulous and further in view of Lefkowitz et al. (U.S. Patent No. 5,440,476, hereafter "Lefkowitz"); claims 13, 42 and 59 stand rejected as being unpatentable over Buoguila and Papadopoulous and further in view of Stork et al. (U.S. Patent No. 6,104,380, hereafter "Stork"); claims 17 and 51 stand rejected as being unpatentable over Buoguila and Papadopoulous and further in view of Sato et al. (U.S. Patent No. 5,305,429, hereafter "Sato"); claim 52 stands rejected as being unpatentable over Buoguila, Papadopoulous and Sato and further in view of Stork; claims 38, 61 and 83 stand rejected as being unpatentable over Buoguila and Sato.

Amended Independent Claims 9 and 12

Independent claim 9 has been amended to recite, *inter alia*, "a first, a second, a third, and a fourth brake, each respective brake … configured to prevent rotation, *prior to a power down* of the haptic interface device and while the haptic interface device is powered down, of the respective spool of the respective tool translation effecter device having the respective brake coupled thereto *in response to a controlled power down signal*," (emphasis added) and independent claim 12 has been amended to recite, *inter alia*, "a first, a second, a third, and a fourth brake, each brake … configured to prevent rotation, *prior to a power down* of the haptic interface device and while the haptic interface device is powered down, of the respective spool of the respective tool translation effecter device having the brake coupled thereto *in response to a controlled power down signal*" (emphasis added). Support for the amendments to claims 9 and 12 may be found at least at page 20, line 10, through page 22, line 9, of the original specification.

The respective subject matter of claims 9 and 12 is not obvious to one skilled in the art in view of Buoguila and Papadopoulous at least because, individually and in combination, the references fail to disclose at least a brake that prevents rotation of a spool in response to a controlled power down signal. The Office Action admits that Buoguila fails to disclose a brake and relies on Papadopoulous to disclose a brake assembly. However, the brake assembly of Papadopoulous, as described below, does not prevent rotation of a spool prior to a power down of a winch and does not prevent rotation of a spool in response to a controlled power down signal.

Papadopoulous is directed to a safety brake that prevents rotation of a spool "when the drive motor fails or is otherwise de-energized, *e.g.*, by a power failure, or when it is simply turned off." (Col. 1, line 69, through col. 2, line 2.) As discussed in the interview, Papadopoulous discloses a mechanical safety brake. In particular, Papadopoulous discloses that a "pin 42" is rigidly attached to a "drive gear 44," and during normal operation, the pin 42 moves within a slot to drive "cam plates 34a, 34b" in an alignment that drives the spool for either winding or unwinding. (Col. 4, lines 22-44.) Figure 3 shows pin 42 in operational drive mode driving cam plate 34a and radial flange 50 that forms an end of spool 14, *i.e.*, the pin 42 is at an

end of grove 38 and engages/drives both the cam plate 34a and radial flange 50. Figure 4 shows the pin 42 in brake mode where the cam plate 34a and the radial flange 50 have slipped relative to each other. ("When the drive motor 18 is released, accidently or intentionally, *the cam plates 34 slip* a small amount into an unaligned position, wedging the roller bearings between their faces and preventing rotation of both cam plates and the spool 14 relative to the core member 26." Col. 2, lines 36-41 (emphasis added).)

Papadopoulous fails to disclose, teach or suggest a brake that prevents rotation of a spool prior to a power down. Rather, Papadopoulous discloses that after the drive motor fails or is turned off, there is slippage before the roller bearings are wedged to prevent rotation of the cam plates and the spool.

For at least the reasons above, Buoguila and Papadopoulous, individually and collectively, fail to disclose, teach or suggest at least the aforementioned limitations, and consequently, Applicants respectfully request that the rejection of claims 9 and 12 be withdrawn.

Amended Independent Claim 38

Claims 38, 61 and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buoguila, in view of Sato.

Independent claim 38 has been amended to recite, *inter alia,* "releasing four segments of cable in response to the haptic interface device being powered on, wherein prior to the cable based haptic interface device being powered on the four segments of cable are locked."

Buoguila and Sato, individually and collectively, fail to disclose, teach or suggest releasing cable segments in response to a haptic interface device being powered on. As discussed in the second aforementioned interview, Buoguila fails to disclose a brake. There is nothing in Buoguila to suggest that cable segments are 'released' in response to the haptic interface device being powered on.

While Sato discloses an assembly (coil 46, relay 44 and movable iron member 48) that restricts free passage of a line 12 passing therethrough, "the line 12 of the variable length is sandwiched between the coil 46 and the movable iron member 48" when a current flows through the coil 46. Col. 6, line 65, through col. 7, line 2. There is nothing in Sato to suggest that cable

segments are 'released' in response to the haptic interface device being powered on. Rather, Sato 'sandwiches' the line when power/current is turned on.

Further, as discussed in the aforementioned interview, Papadopoulous fails to cure the deficiencies of Buoguila and Sato. Papadopoulous is directed to a mechanical safety brake assembly to be used in winches such as winches on board a ship, or in an elevator shaft. Such winches are typically used to raise and lower heavy loads. There is nothing that appears to suggest that the cable is released in response to the winch being powered on. Rather, given the purposes of Papadopoulous' winch – for use on board ships and elevators – and the safety aspects of Papadopoulous' brake assembly, Papadopoulous teaches away from releasing a cable in response to the winch being powered on, wherein the cable is locked prior to the winch being powered on.

For at least the reasons above, Buoguila, Sato and Papadopoulous, individually and collectively, fail to disclose, teach or suggest at least the aforementioned limitation, and consequently, Applicants respectfully request that the rejection of claim 38 be withdrawn.

Additional Cited References

Applicants respectfully submit that the pending claims are allowable over the aforementioned cited references.

Lefkowitz is cited for a power-driven reeving system that can adjust the speed of a spooling mechanism based on the amount of cable wound on a spool. However, Lefkowitz fails to disclose, teach or suggest, at least a brake that prevents rotation of a spool prior to a power down, let alone, a brake that prevents rotation of a spool in response to a controlled power down signal. Further, Lefkowitz fails to disclose, teach or suggest, releasing cable segments in response to a haptic interface device being powered on.

Stork is cited for a sensor array. However, Stork fails to disclose, teach or suggest, at least a brake that prevents rotation of a spool prior to a power down, let alone, a brake that prevents rotation of a spool in response to a controlled power down signal. Further, Stork fails to disclose, teach or suggest, releasing cable segments in response to a haptic interface device being powered on.

Consequently, Lefkowitz and Stork fail to cure the deficiencies of Buoguila and Papadopoulous and fail to cure the deficiencies of Buoguila and Sato.

Claims 49, 51, 52, 59 and 81 depend, directly or indirectly, from independent claim 9, and consequently, are allowable for at least the reason that they depend from an allowable claim.

Claims 13-15, 17, 26-28, 42, 54 and 28 depend, directly or indirectly, from independent claim 12, and consequently, are allowable for at least the reason that they depend from an allowable claim.

Claims 39, 61 and 83 depend directly from independent claim 38, and consequently, are allowable for at least the reason that they depend from an allowable claim.

Conclusion

Applicants respectfully submit that the pending claims are in condition for allowance. Any remarks in support of patentability of one claim should not be imputed to any other claim, even if similar terminology is used. Any remarks referring to only a portion of a claim should not be understood to base patentability on that portion; rather, patentability must rest on each claim taken as a whole. A number of clarifying amendments have also been made to the above claim set. Applicants do not acquiesce to each of the Examiner's rejections and to each of the Examiner's assertions regarding what the cited references show or teach, even if not expressly discussed herein. Although changes to the claims have been made, no acquiescence or estoppel is or should be implied thereby; such amendments are made only to expedite prosecution of the present application and are without prejudice to the presentation or assertion, in the future, of claims relating to the same or similar subject matter.

If the undersigned attorney has overlooked a relevant teaching in any of the references, the Examiner is requested to point out specifically where such teaching may be found. In light of the above amendments and remarks, Applicants respectfully submit that all pending claims are allowable. Applicants, therefore, respectfully request that the Examiner reconsider this application and timely allow all pending claims. The Examiner is encouraged to contact the undersigned by telephone to discuss the above and any other distinctions between the

claims and the applied references, if desired. If the Examiner notes any informalities in the claims, the Examiner is encouraged to contact the undersigned by telephone to expediently correct such informalities.

Respectfully submitted,

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